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EXAMINER

TSEGAYE, SABA

ART UNIT PAPER NUMBER

2662

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/693,532	Applicant(s) WALTON ET AL.	
	Examiner Saba Tsegaye	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed on 01/14/05. Claims 1-41 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 102

2. Claims 1, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruno et al. (US 6,049,548).

Regarding claims 1, 39 and 40, Bruno discloses a method of accessing a wireless multiple-access communication system, comprising:

determining a current operating state of a terminal (determining the status, busy or idle, of a multi-access satellite channel);

selecting one contention-based random access channel from among at least two contention-based random access channels based on the current operating state (S-ALOHA and CS-P/CD-E type) (column 3, lines 14-40); and

transmitting a message on the selected random access channel to access the system (see Figs. 2a,b, 3ab; column 3, lines 14-40).

3. Claims 1-11 and 15-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayerst et al. (US 5,638,369).

Regarding claims 1, 39 and 40, Ayerst discloses, in Fig. 8, a method of accessing a wireless multiple-access communication system, comprising:

Art Unit: 2662

determining a current operating state of a terminal (type of inbound message is determined (a unsolicited message, a scheduled acknowledgment, a scheduled response or a demand ALOH response message);

selecting one contention-based random access channel from among at least two contention-based random access channels based on the current operating state (block 830, a unsolicited message, a scheduled acknowledgment) (column 17, lines 10-62); and

transmitting a message on the selected random access channel to access the system (block 850).

Regarding claim 2, Ayerst discloses the method wherein the at least two random access channel include a first random access channel used by registered terminals for system access (block 855) and a second random access channel used by registered and unregistered terminals for system access (blocks 835-850; column 5, lines 20-23; column 16, lines 15-18).

Regarding claims 3 and 25, Ayerst discloses the method wherein transmissions on the first random access channel are compensated for propagation delay (when the type is “scheduled” the message is transmitted at the scheduled **time slot**; it is inherently compensated for propagation delay).

Regarding claim 4, Ayerst discloses, in Fig. 8, the method wherein the current operating state is indicative of whether or not the terminal has registered with the system (block 830).

Art Unit: 2662

Regarding claims 5, 16 and 20, Ayerst discloses the method of claim 1, wherein the current operating state is indicative of whether or not the terminal can compensate for propagation delay to an access point receiving the message (column 17, lines 11-40).

Regarding claims 6-8, Ayerst discloses the method further comprising: retransmitting the message until an acknowledgment is received for the message or a maximum number of access attempts has been exceeded (column 1, lines 47-49)

Regarding claim 9, Ayerst discloses the method of claim 1, wherein the transmitting includes

selecting a slot from among a plurality of slots available for the selected random access channel (column 17, lines 15-20), and

transmitting the message in the selected slot (column 17, lines 15-20).

Regarding claim 10, Ayerst discloses the method of claim 1, wherein the message includes an identifier for the terminal (column 7, lines 1-22).

Regarding claim 11, Ayerst discloses the method of claim 10, wherein the identifier is unique to the terminal (column 7, lines 1-22).

Regarding claim 15, Ayerst discloses, in fig. 8, a method of accessing a wireless multiple-access multiple-input multiple-output (MIMO) communication system, comprising:

determining whether a terminal is registered or unregistered with the system (block 830);
if the terminal is registered, transmitting a first message on a first random access channel to access the system (block 855); and
if the terminal is unregistered, transmitting a second message on a second random access channel to access the system (blocks 835-850).

Regarding claims 17 and 24, Ayerst discloses, in Fig. 8, a method of facilitating random access in a wireless multiple-access communication system, comprising:

processing a first random access channel used by registered terminals to access the system (blocks 830, 855); and

processing a second random access channel used by registered and unregistered terminals to access the system (blocks 835-850; column 15, line 55-column 17, line 62).

Regarding claim 18, Ayerst discloses the method wherein the processing for each of the first and second random access channels includes detecting for presence of transmissions on the random access channel (column 1, line 39-49).

Regarding claim 19, Ayerst discloses, in figs. 3 and 4, the method wherein the detecting is base on a pilot that is included in each transmission on the first and second random access channels (sync signal 331; column 8, lines 37-48).

Regarding claims 21 and 22, Ayerst discloses wherein transmissions on the first random access channel are compensated for propagation delay, and wherein the processing the first random access channel includes detecting for presence of a transmission in each of a plurality of slots available for the first random access channel (column 17, lines 15-27).

Regarding claim 23, Ayerst discloses the method wherein the processing the second random access channel includes, detecting for presence of transmissions on the second random access channel by performing sliding correlation (column 17, lines 40-61).

Regarding claim 26, Ayerst discloses, in Figs. 3-5, the random access channel wherein the first (400) and second random (500) access channels are associated with first and second segments, respectively, in a frame (330).

Regarding claim 27, Ayerst discloses, in Figs. 3-5, the random access channel wherein the first (430, 450) and second (430, 450) segments are configurable for each frame (column 10, lines 1-13; column 11, lines 59-63).

Regarding claim 28, Ayerst discloses, in Figs. 3-5, the random access channel wherein each of the first (430, 450) and second (430, 450) segments is divided into a plurality of slots.

Regarding claim 29, Ayerst discloses the random access channel wherein the duration of each of plurality of slots for the second segment is defined to be longer than a largest expected round trip delay for terminals in the system (column 17, lines 40-46).

Regarding claims 30 and 31, Ayerst discloses that the random access channel wherein the first (400) and second (500) random access channels are associated with first (430, 515) and second (450, 518) protocol data units respectively (see figs. 4 and 5).

Regarding claims 32-37, Ayerst discloses that the random access channel wherein the first and second PDUs are associated with first and second reference portions, respectively (a packet is a transmission unit that consists binary digits representing both data and a header (message portion) containing an identification number, source and destination addresses and error control data) (column 10, line 14-column 11, line 42; column 12, lines 32-44).

Regarding claim 38, Ayerst discloses the ransom access channel wherein the first and second PDUs are associated with different coding schemes (column 15, lines 35-4).

Regarding claim 41, Ayerst discloses, in Figs. 7 and 8, an apparatus in a wireless multiple-access communication system, comprising:

means for processing a first contention-based ransom access channel used by registered terminals to access the system (block 855; column 17, lines 25-32); and

means for processing a second contention-based random access channel used by registered and unregistered terminals to access the system (blocks 835-850; column 5, lines 20-23; column 16, line 15-18).

Claim Rejections - 35 USC § 103

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ayerst.

Regarding claim 14, Ayerst discloses all the claim limitations as stated above. Further, Ayerst discloses that a multiple-access communication system uses frequency division multiplexing. However, Ayerst does not expressly disclose that the multiple-access communication system uses OFDM.

It would have been obvious to one ordinary skill in the art at the time the invention was made to use OFDM in the multiple-access communication system of Ayerst. One ordinary skill in the art would have been motivated to do this because using OFDM reduces multiple-access interference so that spectral efficiency and high data rate limits in a common wireless channel are increased.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ayerst in view of du Crest et al. (US 2004/0047292).

Ayerst discloses all the claim limitations as stated above. Further, Ayerst discloses that each of the stations is assigned a unique identification. However, Ayerst does not expressly disclose a common identifier used by unregistered terminals.

Crest teaches that when a traffic channel shared by more than one user terminal, an identifier can determine terminal by a temporary flow identity. This identifier survives only for the duration of the channel, i.e. it does not code for the user terminal uniquely but is merely used to identification of messages to or from a particular user terminal for the time period of the respective channel transmission (0057).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Crest of using a common identifier in the system of Ayerst. One of ordinary skill in the art would have been motivated to do this because using a common identifier allows reusing and sharing the same identifier.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ayerst in view of Caldwell (US 2002/0122393).

Ayerst discloses all the claim limitations as stated above, except for multiple-access communication system supports terminal with multiple antennas.

Caldwell teaches in Fig. 1, a mobile terminal that comprises two antennas 12 and 26. It would have been obvious to one ordinary skill in the art at the time the invention was made to use the teachings from Caldwell of using multiple antennas in the system of Ayerst. One of ordinary skill in the art would have been motivated to do this because multiple antennas allows the mobile terminals to measure the quality of signal reception by each of the two antennas and selects the one of the at least two antennas providing the better quality of signal reception.

Response to Arguments

6. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2662


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
July 25, 2005


JOHN PEZZULLO
PRIMARY EXAMINER